



# MDC Resource Science

## Movement and Survival of Juvenile Walleye in the Current and Black Rivers

### Science Notes



# Movement and Survival of Juvenile Walleye in the Current and Black Rivers

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## SUMMARY

The “Black River” strain of walleye is stocked in both the Current and Black Rivers to supplement wild fish populations. However, when conducting population estimates, biologists have continually sampled very low numbers of young walleye. This study was implemented to track the movement and habitat selection of young walleye to better understand their movement patterns. This information will help biologists further refine stocking locations and standardize sampling methods to more effectively sample juvenile walleye in these rivers.

**Objective: Determine movement and survival of stocked walleye in a closed and open river system.**

## Project Details

- Radio telemetry was used to track movement of 15 walleye in each river (April thru August 2007)
- Locations of tagged fish were recorded each week
- Depth and habitat at each location was examined
- Survival and habitat use at each location was confirmed with snorkeling
- Day vs. night movement was examined by tracking fish continuously for 24 hours
- Several tagged fish were recaptured at end of study to compare growth rates between river systems

## Preliminary Results

### Movement

- Walleye movement was greater and occurred earlier on the Current River than on the Black River (Figure 1).
- Initial movement was high in both rivers. After the 7th week most walleye took residence in a particular area and remained there for the duration of the study (Figure 1).
- Most movement was upstream in the Current River, with only one fish settling below the release site (moved into Arkansas and then back into Missouri).
- On the Black River, upstream movement was impeded by Clearwater Dam.
- Tagged fish were normally found in deeper water near boulders or downed trees during the day; fish moved onto the shallow shoals at night to feed.

### Survival and Growth

- Total mortality was much lower in the Current River (Table 1).
- Great blue herons were a major source of mortality in the Black River; fish moved into shallow slack water below the dam at night allowing herons to effectively prey upon them.
- Fish recovered from the Current River were larger in size and in better condition than fish from the Black River.

**Table 1: Percent mortality of walleye (N = 15) in the Current and Black Rivers**

Reason for Loss	Black River	Current River
Great blue heron	33 %	7 %
Unknown	13 %	13 %
<b>Total Mortality</b>	<b>46 %</b>	<b>20 %</b>

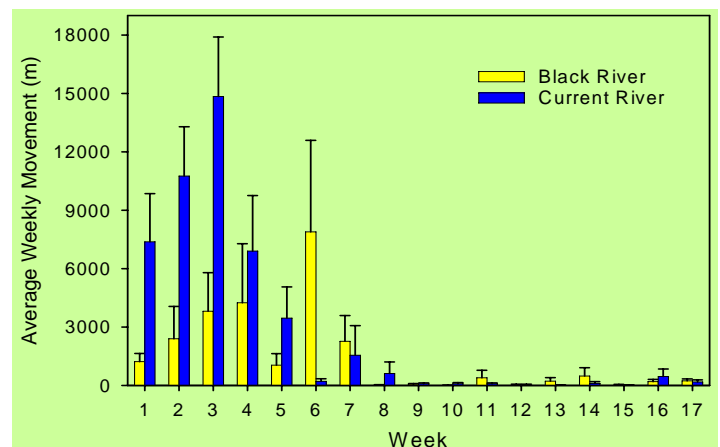


Figure 1. Average weekly movement (meters) by juvenile walleye in the Current and Black Rivers. Error bars represent one standard error of the averages for each week.

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